Fig.1

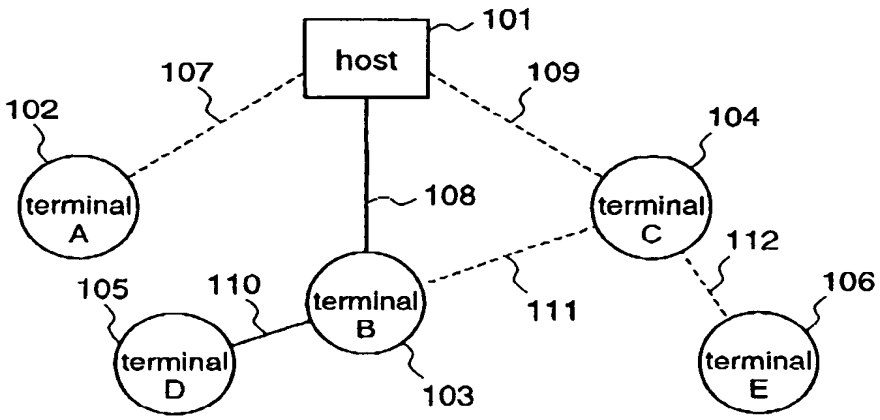

host
101
107
109
102
104
terminal A
108
terminal C
112
105
110
terminal B
111
106
terminal D
terminal E
103

Fig.2

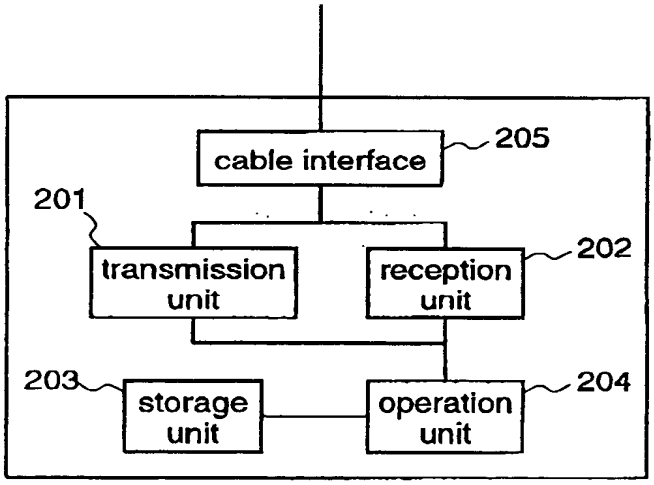

cable interface
205
201
transmission unit
reception unit
202
203
storage unit
operation unit
204

Fig.3

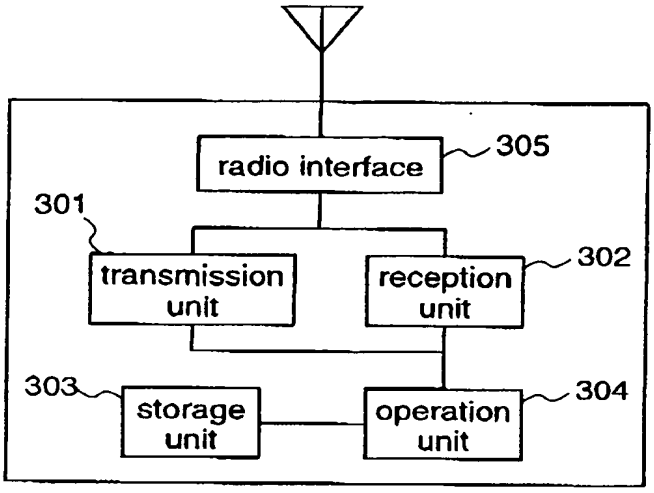


Fig.4

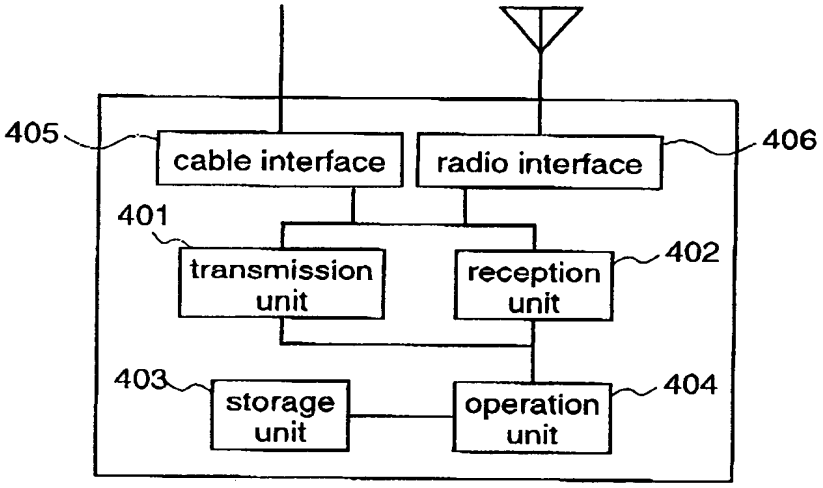


Fig.5

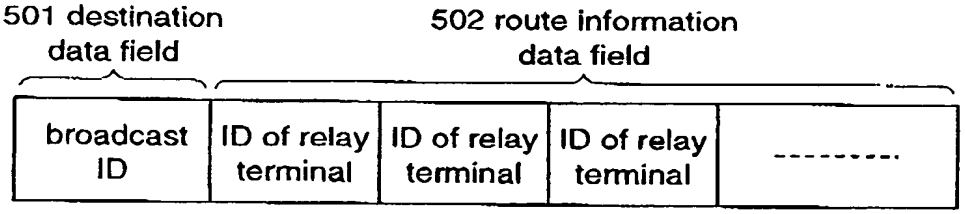


Fig.6

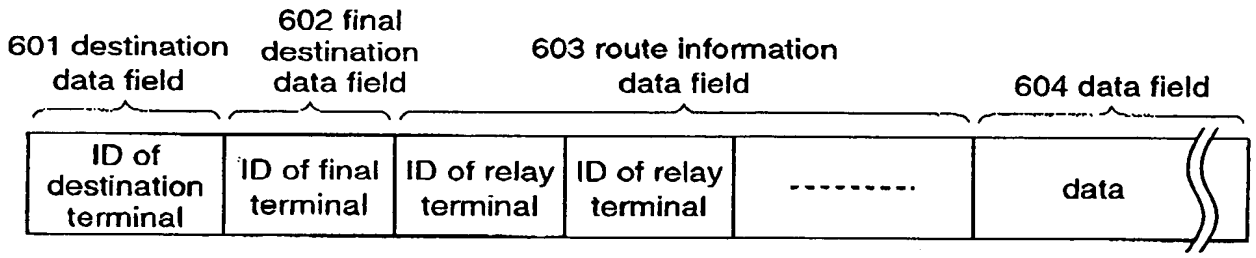

601 destination data field
602 final destination data field
603 route information data field
604 data field
ID of destination terminal
ID of final terminal
ID of relay terminal
ID of relay terminal
----
data

Fig.7

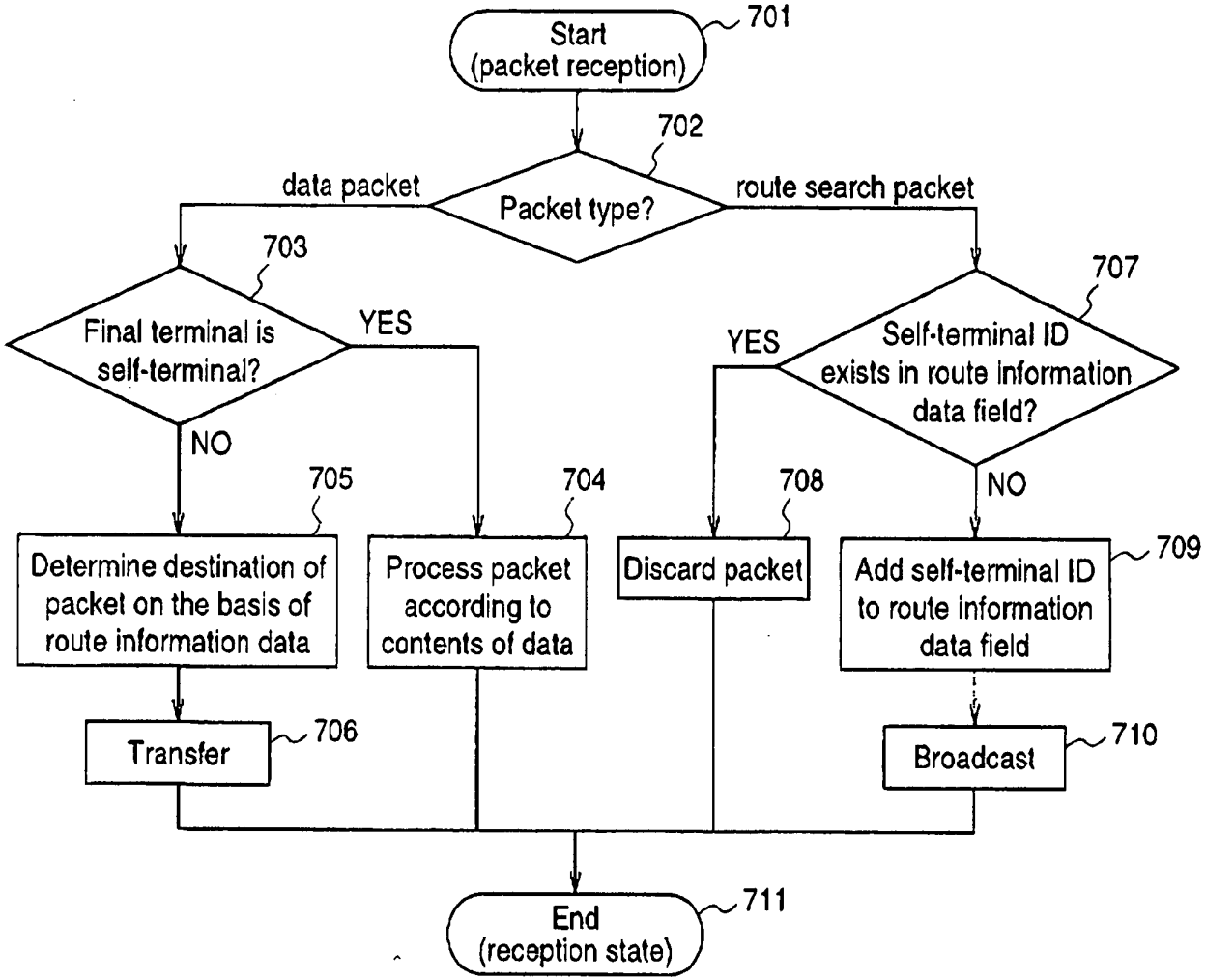

Start
(packet reception)
701
702
Packet type?
data packet
route search packet
703
Final terminal is
self-terminal?
YES
NO
707
Self-terminal ID
exists in route information
data field?
YES
NO
705
Determine destination of
packet on the basis of
route information data
704
Process packet
according to
contents of data
708
Discard packet
709
Add self-terminal ID
to route information
data field
706
Transfer
710
Broadcast
711
End
(reception state)

Fig.8

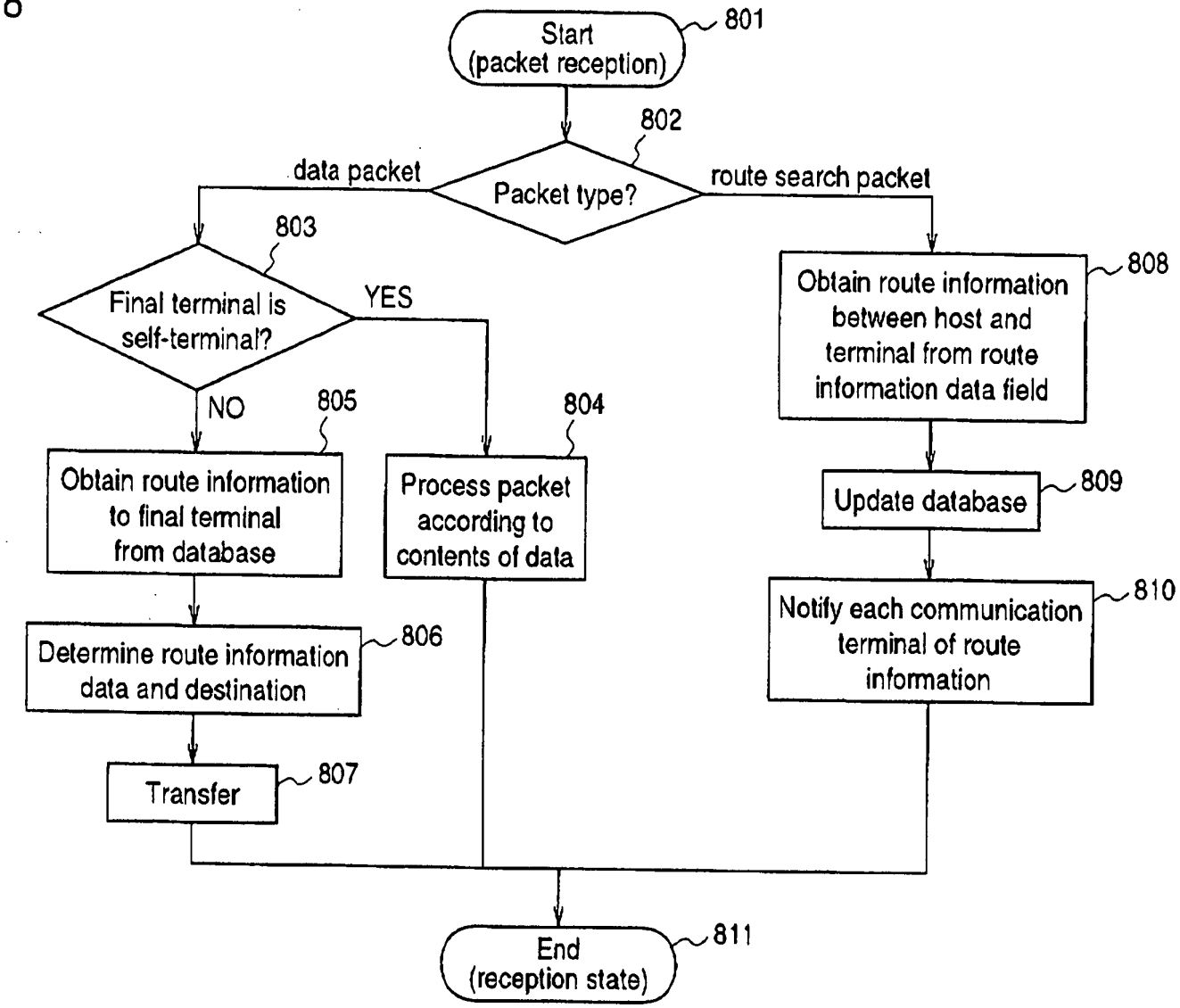
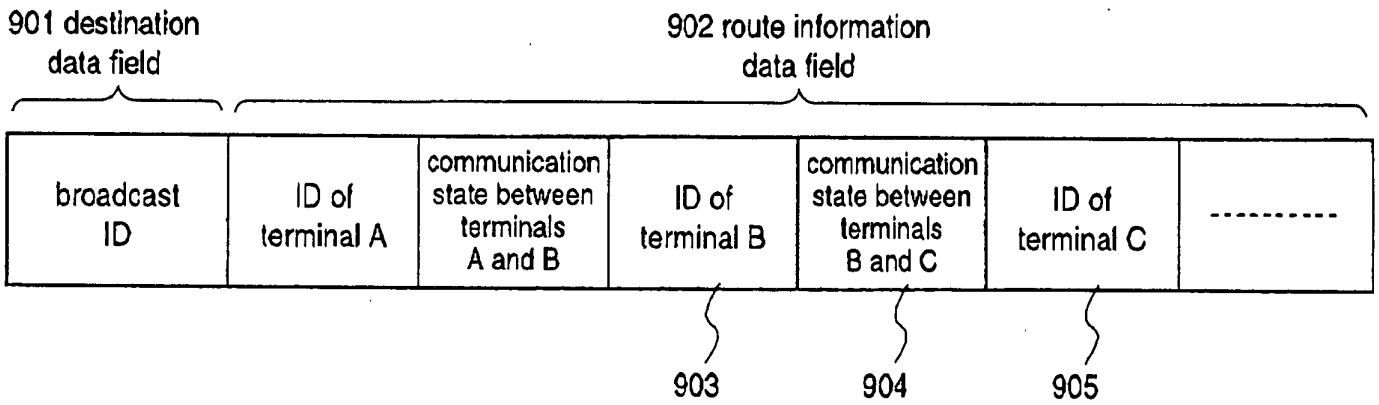

Start
(packet reception)
801
802
Packet type?
data packet
route search packet
803
Final terminal is
self-terminal?
YES
NO
805
804
Obtain route information
to final terminal
from database
Process packet
according to
contents of data
Determine route information
data and destination
806
Transfer
807
808
Obtain route information
between host and
terminal from route
information data field
809
Update database
810
Notify each communication
terminal of route
information
End
(reception state)
811

Fig.9


901 destination data field
902 route information data field
broadcast ID
ID of terminal A
communication state between terminals A and B
ID of terminal B
communication state between terminals B and C
ID of terminal C

903
904
905

Fig.10

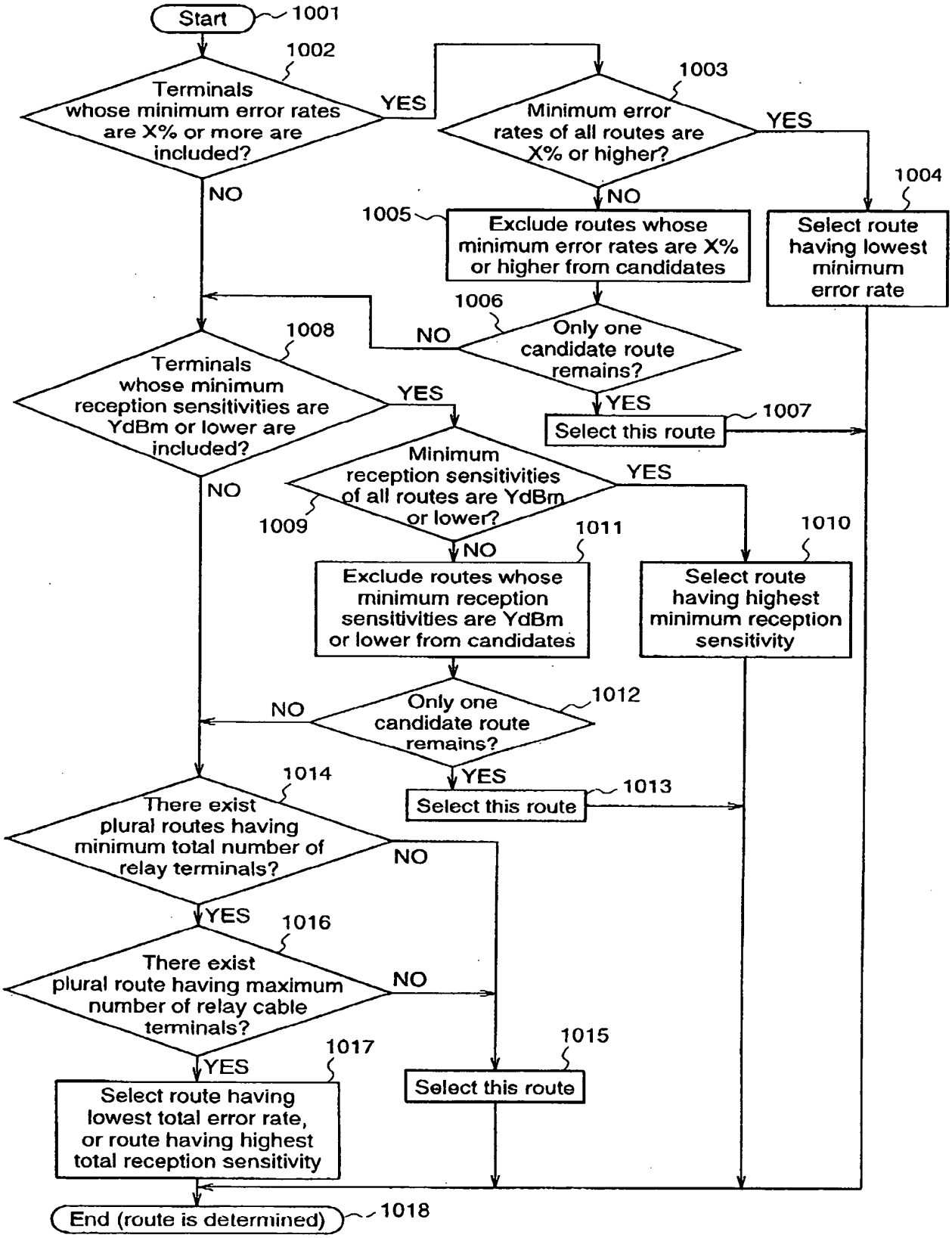

Start
1001
1002
Terminals whose minimum error rates are X% or more are included?
YES
NO
1003
Minimum error rates of all routes are X% or higher?
YES
NO
1004
Select route having lowest minimum error rate
1005
Exclude routes whose minimum error rates are X% or higher from candidates
1006
Only one candidate route remains?
NO
YES
1007
Select this route
1008
Terminals whose minimum reception sensitivities are YdBm or lower are included?
YES
NO
1009
Minimum reception sensitivities of all routes are YdBm or lower?
YES
NO
1010
Select route having highest minimum reception sensitivity
1011
Exclude routes whose minimum reception sensitivities are YdBm or lower from candidates
1012
Only one candidate route remains?
NO
YES
1013
Select this route
1014
There exist plural routes having minimum total number of relay terminals?
NO
YES
1016
There exist plural route having maximum number of relay cable terminals?
NO
YES
1015
Select this route
1017
Select route having lowest total error rate, or route having highest total reception sensitivity
End (route is determined)
1018

Fig.11

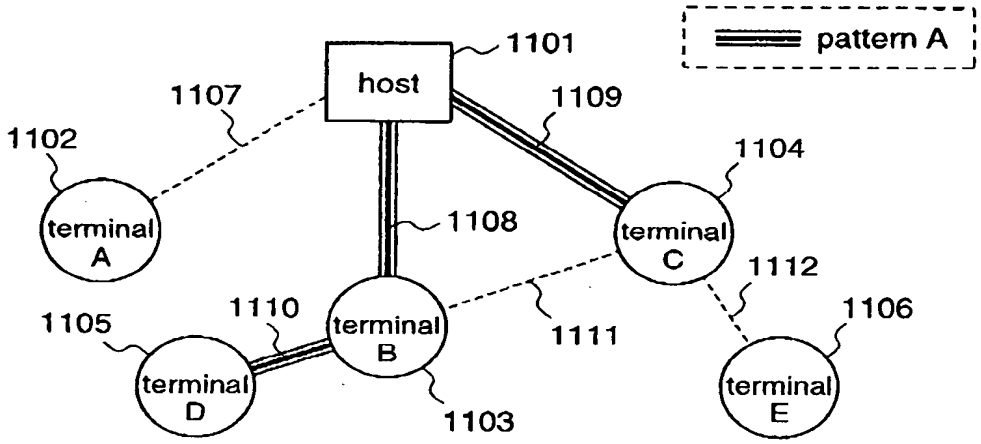

pattern A
host
1101
1107
1109
1102
1104
terminal A
1108
terminal C
1112
1110
1105
terminal B
1111
1106
terminal D
terminal E
1103

Fig.12

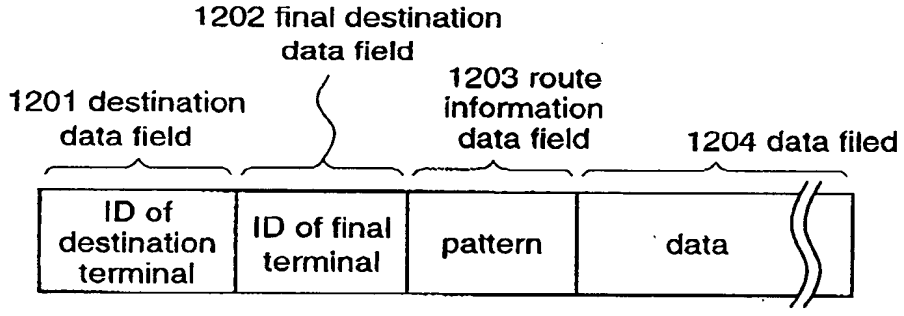

1202 final destination data field
1201 destination data field
1203 route information data field
1204 data filed
ID of destination terminal
ID of final terminal
pattern
data

Fig.13

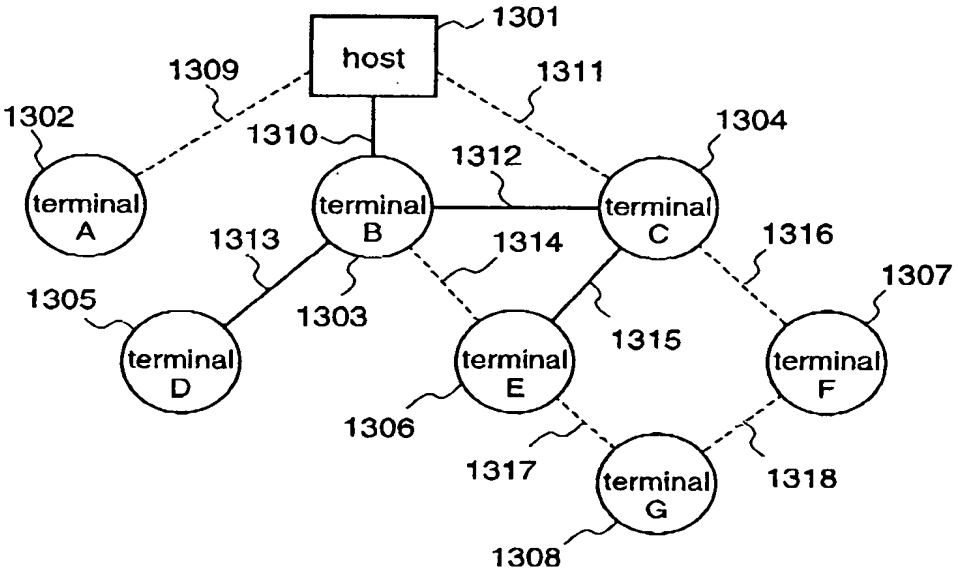


Fig.14

1401 terminal ID	1402 route	1403 priority
G	F—C	5
G	F—C—B	4
G	E—B	3
G	E—C	2
G	E—C—B	1

Fig.15

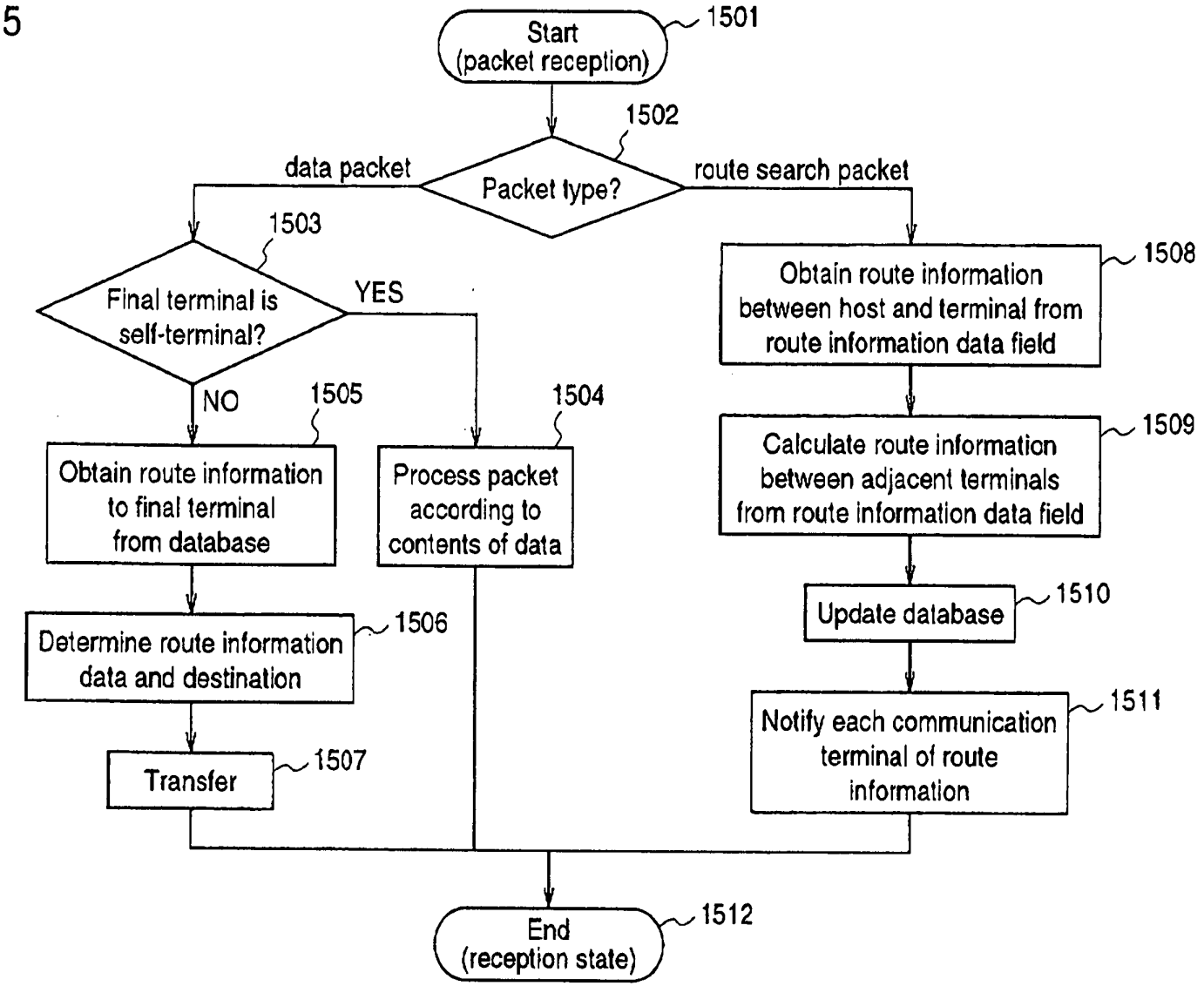
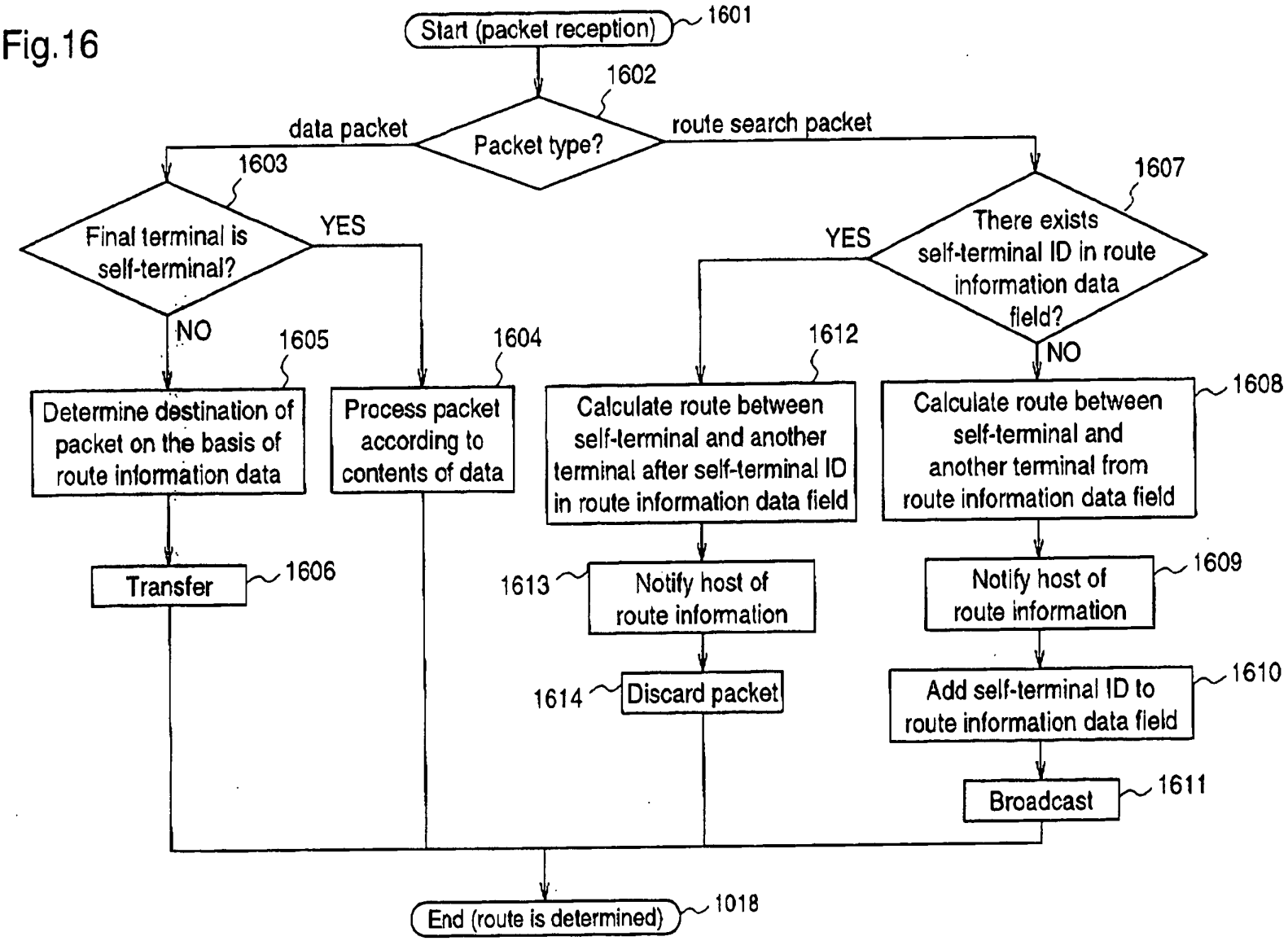

Start
(packet reception)
1501
1502
Packet type?
data packet
route search packet
1503
Final terminal is
self-terminal?
YES
NO
1505
1504
Obtain route information
to final terminal
from database
Process packet
according to
contents of data
Determine route information
data and destination
1506
Transfer
1507
1508
Obtain route information
between host and terminal from
route information data field
1509
Calculate route information
between adjacent terminals
from route information data field
1510
Update database
1511
Notify each communication
terminal of route
information
End
(reception state)
1512

Fig.16


Start (packet reception)
1601
1602
Packet type?
data packet
route search packet
1603
Final terminal is self-terminal?
YES
NO
1605
Determine destination of packet on the basis of route information data
1606
Transfer
1604
Process packet according to contents of data
1607
There exists self-terminal ID in route information data field?
YES
NO
1612
Calculate route between self-terminal and another terminal after self-terminal ID in route information data field
1613
Notify host of route information
1614
Discard packet
1608
Calculate route between self-terminal and another terminal from route information data field
1609
Notify host of route information
1610
Add self-terminal ID to route information data field
1611
Broadcast
End (route is determined)
1018